

ATTITUDES OF CITIZENS TOWARDS COMMUNITY INVOLVEMENT FOR DEVELOPMENT AND MAINTENANCE OF URBAN GREEN SPACES: A FAISALABAD CASE STUDY

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Urban green spaces (UGS) support urban sustainability and improve the overall life quality of urbanities. However, increasing population shift in urban areas can drive the transformation of UGS into residential areas. The present study was conducted in the four towns of Faisalabad city, Pakistan, to analyze the role of local government and community in the development and maintenance of green spaces; causes for the failure of sustainable urbanization projects in the city, and needs, dimensions of inhabitant's attitudes toward UGS to provide valuable information concerning future planning of urban sustainability. A questionnaire and field survey of the total 330 respondents from the four towns of city was conducted to evaluate their views regarding current situation of UGS and community involvement with local government for the rehabilitation of UGS. The results showed maximum frequency on daily basis visits (92.3%) by respondents. Among them (68.7%) were agreed regarding presence of UGS depicted that 80.3% were showed not satisfied (disagree) while 19.7% of the respondents showed satisfaction (agree). Present results revealed that 80% respondents were unaware of any development done with the participation of the community whereas only 20% were aware about it. Among 85.3% unsatisfied respondents about UGS, 20.7% revealed "daily maintenance problems" for the worst condition of UGS. For sustainable development of public parks and green spaces it is worth to consider the liking and disliking of local people during the planning process.

Keywords: Community involvement, flowering plants, landscape, parks, sustainable development, urbanization.

INTRODUCTION

Throughout the world, the cities are facing a constantly growing challenge of urbanization. The available urban green spaces (UGS) surrounding our city areas are being converted into residential and commercial constructions to gratify the rapid population shift and business activities. The UGS are usually termed as open, non-paved area having high vegetation proportion e.g. parks, gardens, road side plantation etc. (Younis *et al.*, 2002; Swanwick *et al.*, 2003). UGS are integral and multifunctional components of cities owing to their relevance towards environmental sustainability, ecological diversity, recreational role, health of citizens, economic benefits, societal well-being and providing the essential structural and functional spaces (Haq, 2011; Krisdianto *et al.*, 2012; Senanayake *et al.*, 2013). They not only offer a habitat for living organisms but they also provide an ideal arena to spend leisure time and communicate socially (Riaz *et al.*, 2002; Younis *et al.*, 2008). UGS also function as neutralizing the urban stresses e.g. stench, noise, heat and air pollution (Hussain *et al.*, 2010; You, 2016). As a consequence

of abrupt population growth and be deficient in proper urban green space planning, cities of the developing countries have lower environmental quality in contrast to the cities in developed countries (Wright-Wendel *et al.*, 2012; Senanayake *et al.*, 2013). UGS are a gateway for fulfilling the dream of the sustainable development and they cannot be overlooked by policy makers (Haq, 2011; Riaz *et al.*, 2012b). Frequent deficits in term of both the quantity and quality demands appropriate strategies for the development, maintenance and improvement of UGS.

Faisalabad is the third mega city of Punjab province and largest textile industry hub in Pakistan. Owing to huge textile industry, it is the largest revenue generator for the country, and regarding of this attribute known as the "Manchester of Pakistan". Being an industrial city, Faisalabad is rapidly becoming populous resulting in pollution, health and social issues. Lack of interest regarding maintenance of UGS is also a major issue. Thus, there is a need to discuss how city dwellers perceive the changes in urban green spaces and their perspective to make improvement. All these problems have a solution in the form of urban green spaces. Development and

maintenance of UGS is a responsibility of the local government of the country. Local government here usually means a municipality, township and local public authority that are usually neglected in the country. Public attitudes must be understood and accounted for developing the natural resource planning strategies. The theme of this study was to understand and expose community needs for green spaces, their perception and to investigate the value of landscape in towns and working of the local government and its effect on the communities through social survey, interviews and some dialogs, evaluation of the local government recent working status in comparison with the developed agencies, policies and legislations with respect to UGS, identification of problems faced by local government and suggestions for improving the local government performance regarding green spaces, involvement of community with local government for better establishment and better maintenance of green spaces and to estimate the future needs of green spaces in the city.

MATERIALS AND METHODS

The present study was conducted in Faisalabad city. Pakistan government system is divided into a three-tier local government structure that are 1) district government, 2) Tehsil government, and 3) The union administration. The city district Faisalabad is divided into eight Towns including, Lyallpur Town, Jinnah Town, Madina Town, Iqbal Town, Tandianwala Town, Jaranwala Town, Samundri Town, Jhumra Town (CDGF, 2009). Among these eight, we selected four towns, Lyallpur Town (LT), Madina Town (MT), Jinnah Town (JT) and Iqbal Town (IT) for study. These towns had their own garden branches. Now they are under an umbrella of Parks & Horticulture Agency (PHA) that was established in July, 2009. These urban towns were central point for green spaces in the city. UGS of each town were selected to evaluate the local government present working and last year performance regarding these UGS.

To achieve the desired results from the projects of green spaces, the involvement of local community regarding the development and management was considered appropriate. Unexpectedly, these green spaces were deteriorated with the passage of time. Their dreadful conditions developed the feeling of least interest by of local community and other responsible authorities.

Sampling: The total sample size was 330 respondents. These included 300 visitors (75 from each town) and 30 local government employees. The local government employees were interviewed. A descriptive cross sectional survey methodology was used for the study.

The issues that were studied in the local government system with respect to UGS included: 1) status of working of local governments, 2) review of policies and legislations for landscaping in Faisalabad, 3) problems faced by local governments, 4) prospects.

Collection of data: To record data, respondents were selected from four towns. The detail maps of the towns were acquired from FDA (Faisalabad Development Authority) for marking the collection of UGS to conduct interviews. For this purpose, data were collected through questionnaire format. A questionnaire consisting of both open ended and close ended questions was developed in English version to collect information. For respondent's convenience, the questions in local language (Urdu, Punjabi) were asked. Respondents included: local bodies' representatives, community contribution, local government officials and officials of PHA (Parks & Horticulture Agency, Faisalabad). The interview timings were 8:00 to 11:00 a.m. and 3:00 to 6:00 p.m. because of maximum availability of people.

Pre-testing: For pre-testing 25 respondents were selected from each town and 2 local government officials from each town were interviewed. After pre-testing some questions were redesigned and modified to improve the workability of the tool (Appendix I-II).

The study was carried out in two phases including: a) Field survey b) Social survey

a) Field survey: To evaluate the current condition of the UGS Field survey was carried out of selected city towns. Photographs from different angles and locations of deteriorated UGS regarding development and maintenance were taken for record purpose.

b) Social survey/perception of people: In social survey interviews of visitors and union council level inhibitors regarding the development of green spaces were conducted. These interviews were planned according to the availability of the respondents. Both male and female respondents of diverse age groups were interviewed. Additionally, a dialogue analysis was performed with the local government officials to evaluate their knowledge or point of view about status of UGS. Thus, total thirty officials were randomly selected for dialogue analysis from the four selected towns under study.

Analysis of data: The collected data were analyzed by chi-square with SPSS (Statistical Package for Social Sciences). Dialog analysis was focused on numerous problems comprising dialog method detection (Byron and Heeman, 1997), segmentation (Hearst, 1993). Chi-square test was used to determine the statistical significance of non-parametric population and qualitative observation.

RESULTS AND DISCUSSION

Socio-economic characteristics: Human attitude regarding life realities is much dependent on the socio-economic characteristic e.g. gender, age, sex, profession and education of the respondents. Likewise, the education and profession role was also well acknowledged and documented. The proportion of respondent's gender difference was male (66%) and female (34%). The distribution of respondents from the

four selected town areas including: “IT” (male 78.7% and female 21.3%), “JT” (male 45.3% and female 54.7%), “LT” (male 78.7% and female 21.3%) and “MT” (males 61.3% and female 38.7%) as shown in Table 1. A significant relationship among the views and observations of teen-agers and other age groups was noted. Among all respondents regarding age,

Table 1. Demographic characteristics of respondents in various towns of Faisalabad.

| Gender | Towns | | | | Total |
|--------------------------------|-------|-------|-------|-------|-------|
| | IT | JT | LT | MT | |
| Male | 59 | 34 | 59 | 46 | 198 |
| %age | 78.7 | 45.3 | 78.7 | 61.3 | 66.0 |
| Female | 16 | 41 | 16 | 29 | 102 |
| %age | 21.3 | 54.7 | 21.3 | 38.7 | 34.0 |
| Total | 75 | 75 | 75 | 75 | 300 |
| %age | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Profession | | | | | |
| Business | 3 | - | 1 | 8 | 12 |
| %age | 4.0 | - | 1.3 | 10.7 | 4.0 |
| Doctor | 5 | 8 | 3 | - | 16 |
| %age | 6.7 | 10.7 | 4.0 | - | 5.3 |
| Govt. Job | 15 | 7 | 3 | - | 25 |
| %age | 20.0 | 9.3 | 4.0 | - | 8.3 |
| Labor | 8 | - | 1 | - | 9 |
| %age | 10.7 | - | 1.3 | - | 3.0 |
| Pvt. Job | 1 | - | 17 | 3 | 21 |
| %age | 1.3 | - | 22.7 | 4.0 | 7.0 |
| Housewives | 1 | - | 1 | 8 | 10 |
| %age | 1.3 | - | 1.3 | 10.7 | 3.3 |
| Student | 17 | 30 | 38 | 50 | 135 |
| %age | 22.7 | 40.0 | 50.7 | 66.7 | 45.0 |
| Teaching | 25 | 25 | 5 | 6 | 61 |
| %age | 33.3 | 33.3 | 6.7 | 8.0 | 20.3 |
| Any other | - | 5 | 6 | - | 11 |
| %age | - | 6.7 | 8.0 | - | 3.7 |
| Education | | | | | |
| Illiterate | 9 | - | - | - | 9 |
| %age | 12.0 | - | - | - | 3.0 |
| Primary-Middle | - | - | 5 | 12 | 17 |
| %age | - | - | 6.7 | 16.0 | 5.7 |
| Matriculation | 1 | 4 | 9 | 4 | 18 |
| %age | 1.3 | 5.3 | 12.0 | 5.3 | 6.0 |
| College | 10 | 5 | 22 | 25 | 62 |
| %age | 13.3 | 6.7 | 29.3 | 33.3 | 20.7 |
| Higher education %age | 55 | 66 | 39 | 34 | 194 |
| | 73.3 | 88.0 | 52.0 | 45.3 | 64.7 |
| Age category (in years) | | | | | |
| Below 18 | 2 | - | 9 | 8 | 19 |
| %age | 2.7 | - | 12.0 | 10.7 | 6.3 |
| 18-25 | 17 | 45 | 33 | 45 | 140 |
| %age | 22.7 | 60.0 | 44.0 | 60.0 | 46.7 |
| 26-35 | 3 | 14 | 22 | 8 | 47 |
| %age | 4.0 | 18.7 | 29.3 | 10.7 | 15.7 |
| 36-45 | 25 | 6 | 3 | 12 | 46 |
| %age | 33.3 | 8.0 | 4.0 | 16.0 | 15.3 |
| Above 45 | 28 | 10 | 8 | 2 | 48 |
| %age | 37.3 | 13.3 | 10.7 | 2.7 | 16.0 |
| Mode of Travel | | | | | |
| By Car | 34 | 36 | 9 | 46 | 125 |
| | 45.3% | 48.0% | 12.0% | 61.3% | 41.7% |
| By Motor Bike | 25 | 17 | 43 | 15 | 100 |
| | 33.3% | 22.7% | 57.3% | 20.0% | 33.3% |
| Cycle | 12 | 3 | 7 | | 22 |
| | 16.0% | 4.0% | 9.3% | | 7.3% |
| Walk | 4 | 19 | 8 | 12 | 43 |
| | 5.3% | 25.3% | 10.7% | 16.0% | 14.3% |
| All above type | | | 8 | 2 | 10 |
| | | | 10.7% | 2.7% | 3.3% |

6.3% (< 18 years), 46.7% (18-25 years), 15.7% of (26-35 years), 15.3% (36-45 years) and remaining 16% (>45years) (Table 1). Results with respect to education level of the respondents showed: (illiterate, 3%), (highly educated, 64.7%), (Primary-middle education, 5.7%), (matriculation, 6%) and (college level education 20.7%). The distribution regarding profession showed that the proportion of respondents in different business are: business (4%), doctors (5.3%), government employees (8.3%), labor (3%), private job holder (7%), house ladies (3.3 %), students (45%), teaching profession (20.3%) and others (3.7%). The results regarding respondents' mode of travelling towards green spaces is given in Table 1. They were classified according to vehicle (car, motorbike, cycle etc.) along with walk to green spaces. The source of travelling by vehicles was: car (41.7%), motorbike (33.3%), bicycle (7.3%), "by all means" (3.3%). On the other hand, proportion of respondents that used to visit UGS by walk is 14.3%. The maximum traveling source towards UGS was car while minimum was "by all means". Travelling source comparison of four selected towns for UGS visit revealed that among all maximum car usage to visit UGS was found in (MT, 61.3%) followed by (JT, 48%) and (IT, 45.3%) while minimum was noted in (LT, 12%). Comparison among selected towns regarding motorbike usage for visit to UGS showed maximum in (LT, 57.3%), that was followed by (IT, 33.3%) and (JT, 22.7%) while minimum bike usage was noted in (MT, 20%) (Table 1). In case of walk, maximum proportion was noted in "JT" (25.3%) while minimum in "IT" (5.3%) whereas "MT" and "LT", 16.7% and 10.7% respectively. Comparison among towns regarding visit to UGS by using all the means showed maximum in (LT, 10.7%) followed by (MT, 2.7%) while it was noted minimum in both "JT, IT" (0%). The difference among vehicle source usage may be due to the occupation type and livelihood. Visitor's classification regarding visits to UGS was done according to daily, weekly or monthly basis. Results showed maximum frequency in daily bases visits (92.3%) followed by twice a week (3%) and weekly (2.7%) basis while minimum visit frequency was noted in monthly

bases (2%). Response regarding frequency of visit to UGS among selected towns showed maximum trend in "IT" (96%) followed by "JT" (93.3%) and "MT" (92%) while minimum in "LT" (88%) frequency on daily basis. On twice a week basis it found maximum in "LT" (5.3%) followed by "MT" (4%) and "IT" (2.7%) while noted minimum in "JT" (0%). On weekly basis, the response regarding UGS visit frequency was maximum in "LT" 4%, "MT" 2.7%, "JT" 2.7 %, "IT" 1.3%. On monthly basis, the trend among towns regarding "UGS" visit frequency was found as: "JT" 4%, "LT" 2.7%, "MT" 1.3%, "IT" 0%.

Opinion of respondents about the presence of green spaces in vicinity of their residence: Respondents were asked regarding availability of UGS in their vicinity. Among them majority (68.7%) were agreed regarding presence of UGS while remaining (31.3%) told about non-availability of UGS in their vicinity (Table 2). Results regarding comparison among selected towns for availability of UGS under study showed that the maximum availability response was noted in found "IT" (74.7%) while minimum in "JT" (61.3%). "LT" and "MT" showed 66.7% and 72% response regarding presence of UGS. Contrary to this, the respondents that told about non-availability of UGS in their vicinity were maximum found in "JT" (38.7%) followed by "LT" (33.3%) and "MT" (28%) while minimum from "IT" (25.3%) (Table 2). Presence of well-managed green spaces and parks can link residential zones with business, commercial and leisure developments which can improve the attractiveness and accessibility to local amenities and employment centers (Younis *et al.*, 2002; Younis *et al.*, 2008).

Perception of respondents about liking the presence of green spaces near living areas: Respondents were inquired about their personal preference regarding the presence UGS near their vicinity. Results showed that the maximum respondents (93.3%) told positive response towards UGS presence while only (6.7%) showed negative response. Comparison among town regarding this point of views showed maximum positive response from "MT" (98.7%) followed by "LT" 93.3% and "IT" (93.3%) while minimum

Table 2. Distribution of the respondents according to have any green space/landscaped area in vicinity of their residence.

| Response | Towns | | | | Total |
|----------|-------------|-------------|-------------|-------------|--------------|
| | IT | JY | LT | MT | |
| Yes | 56 (74.7%) | 46 (61.3%) | 50 (66.7%) | 54 (72.0%) | 206 (68.7%) |
| No | 19 (25.3%) | 29 (38.7%) | 25 (33.3%) | 21 (28.0%) | 94 (31.3%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 3. Distribution of the respondents according to like to have green spaces near their living place.

| Likeness of "UGS" in vicinity | Towns | | | | Total |
|-------------------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| Yes | 70 (93.3%) | 66 (88.0%) | 70 (93.3%) | 74 (98.7%) | 280 (93.3%) |
| No | 5 (6.7%) | 9 (12.0%) | 5 (6.7%) | 1 (1.3%) | 20 (6.7%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

response was noted from “JT” (88%) (Table 3). On the other hand, the respondents that have negative point of view towards presence of UGS in their vicinity are: “JT” (12%), “LT” (6.7%), “IT” (6.7%) and “MT” (1.3%). Urban green spaces and parks are integral part of any urban setting and these contribute essential role in delivering quality environment to city dwellers and these proved to be the most cost effective tool for improving and sustaining the quality life in urban areas (Riaz *et al.*, 2002). Green structures also offer numerous opportunities and prospects for the education and encouragement of responsible, productive and healthy citizen (Riaz *et al.*, 2010).

Satisfaction level of the respondents with the present conditions of the green spaces in their area: Results regarding the satisfaction level with the overall current landscape condition of available “UGS” (as agreed or disagreed) depict that 80.3% were showed not satisfied (disagree) while 19.7% of the respondents showed satisfaction (agree) (Table 4). Likewise, difference in four selected areas regarding satisfaction showed that maximum satisfaction (Agreed) with respect to the current condition was noted in “IT” (33.3%) followed by “LT” and “MT”, 17.3%, 14.7% respectively). Satisfaction of respondents was found minimum in “JT” (13.3%). Contrary to this, unsatisfied respondents regarding current condition of the UGS in their area were as: “JT” (86.7%), “MT” (85.3%), “LT” (82.7%) and “IT” (66.7%). Well planned and managed green spaces improve the social relationship, neighborliness and friendships among neighbors (Denman *et al.*, 2012). Well planned landscape areas attract larger group of people of varied ages and offer various opportunities for social interaction, improved social functioning, and social events

(Younis *et al.*, 2002). Poorly managed green spaces cannot attract visitors as they may feel unsafe and insecure in such green spaces (Iqbal *et al.*, 2003). Similarly, the sentiments about the unmanaged UGS also affect their visit.

Opinion of unsatisfied respondents about problems they feel: Among all respondents, 80.3% depicted the non-satisfied attitude towards the current situation of UGS. Results showed that 19.3% of the respondents pointed out management problems, 12.3% declared developmental problems, 20.7% revealed daily maintenance problems, 2.7% stated traffic problems and only 3% specified damage to public property (Table 5). Contrary to this, 19.7% disagreed with the stated problems and they identified other reasons for the UGS current condition in accordance with Sjomani *et al.* (2012) who reported transportation the source of pollution and major threat for vegetation in urban areas. Results were also compared among all town respondents. The respondents who reported the possible management problem for the current condition of UGS belongs to different areas under study: “IT” (22.7%), “JT” (18.7%) “LT” (21.3%) and “MT” (14.7%). The proportion of respondents who identified developmental problems as the cause for the current condition of UGS were: “IT” (0%), “JT” (6.7%), “LT” (20%), “MT” (22.7%). While the proportion of those who claimed maintenance problems as a cause of current conditions were: “IT” (24%), “JT” (22.7%), “LT” (9.3%), and “MT” (26.7%). The respondents that claimed traffic problems as the possible cause for the present condition of the UGS were as: “IT” (1.3%), “JT” (6.7%), “LT” (1.3%), and “MT” (1.3%). Deforestation and over population is becoming a great concern regarding environmental deterioration (Brack, 2002). High population growth and indiscriminate exploitation of

Table 4. Distribution of the respondents according to their satisfaction with present condition of green spaces in their area.

| Response | Towns | | | | Total |
|----------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| Yes | 25 (33.3%) | 10 (13.3%) | 13 (17.3%) | 11 (14.7%) | 59 (19.7%) |
| No | 50 (66.7%) | 65 (86.7%) | 62 (82.7%) | 64 (85.3%) | 241 (80.3%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 5. Opinion of respondents about problems regarding green spaces.

| Kind of problems | Towns | | | | Total |
|---------------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| Management | 17 (22.7%) | 14 (18.7%) | 16 (21.3%) | 11 (14.7%) | 58 (19.3%) |
| Development | --- | 5 (6.7%) | 15 (20.0%) | 17 (22.7%) | 37 (12.3%) |
| Daily maintenance | 18 (24.0%) | 17 (22.7%) | 7 (9.3%) | 20 (26.7%) | 62 (20.7%) |
| Traffic problem | 1 (1.3%) | 5 (6.7%) | 1 (1.3%) | 1 (1.3%) | 8 (2.7%) |
| Damage to public property | 1 (1.3%) | 3 (4.0%) | 3 (4.0%) | 2 (2.7%) | 9 (3.0%) |
| All above | 13 (17.3%) | 21 (28.0%) | 20 (26.7%) | 13 (17.3%) | 67 (22.3%) |
| NA (Satisfied) | 25 (33.3%) | 10 (13.3%) | 13 (17.3%) | 11 (14.7%) | 59 (19.7%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

natural non-renewable resources had caused environmental degradation in urban areas (Nowak, 1999; Nowak *et al.*, 2010). Plants mortality were observed between 20-40% for various plant species due to, vandalism, high urban heat, traffic carbon emissions, drought, saline water and poor management are the main reasons of plant mortality (Miller and William, 1991; Younis *et al.*, 2002; Roman and Scatena, 2011). The respondents who were in the opinion of public property problems were: identified by respondents “JT” (4%), “LT” (4%), “MT” (2.7%) and “IT” (1.3%). The respondents who were agree with all the above-mentioned problem categories were of: “IT” (17.3%), “JT” (28%), “LT” (26.7%), and “MT” (17.3%). The respondents who were not agree with the described problems but they claimed for other unknown problems were of: “IT” (33.3%), “LT” (17.3%), “MT” (14.7%) and “JT” (13.3%).

People’s perception about the responsibility for the problems: The respondents were questioned about the responsible body for the deteriorating condition of UGS. They were provided with the options for selecting their own choice including: a) government b) local government c) local community d) all above. The respondents’ percentage regarding the different given choices for the responsibility of current bad situation of the UGS were as: local government (38%), local community (20%), government (21.3%), combination of all the three factors (20.7%) (Table 6). The responsibility claimed to government by respondents from four selected town were as: (IT, 16%), (JT, 29.3%), (LT, 16%), (MT, 24%). In case of accountability requested to local government were as: (IT, 49.3%), (JT, 37.3%), (LT, 22.7%), (MT, 42.7%). In case of charge claimed to local community from different towns were as: “IT” (20%), “JT” (14.7%), “LT” (33.3%), “MT” (12%). According to survey done by Younis *et al.*, (2008) it was found that 7-8% of respondents considered that it is the responsibility of various NGO’s to develop green spaces and parks while 5% and 4% assumed

general public and neighborhood community are responsible for its development respectively. Whereas, majority of respondents considered local government responsibility for the establishment of green spaces.

Opinion of the respondent that agencies can play their role to improve problems: To evaluate the respondent’s perception regarding agencies role for the improvement of UGS, they were enquired regarding their opinions (Table 7). Their opinion was graded as developmental and maintenance approach to cater the problems. Additionally, it was sectioned into three categories i.e. local government, local community and others. The results revealed that 77.3% respondent’s opinion were towards developmental approach regarding problem solving improvement, while 22.7% were disagreed to it. The 38.3% respondents were agreed towards maintenance approach for problem solution and their improvement while 61.7% disagreed to it. Younis *et al.* (2008) concluded that for sustainable development of urban green spaces it is important to clearly describe a well-understood and inter-connected supervision regime and to fix the tasks and liabilities at all management level. Without solid management plan and without community involvement it is impossible to establish green spaces or any other environmental management initiatives in urban areas.

Opinion of the respondent to their awareness about involvement of any government body: To evaluate respondent’s awareness about government body with respect to its responsibility for development and maintenance of UGS, green spaces, respondents were asked. Results showed that 41.7% respondents were well-aware regarding the responsible government officials whereas 58.3% respondents disagree to it (Table 8). The results regarding proportion of respondents who were aware about the responsible government officials revealed as: “IT” (49.3%), “JT” (32%), “LT” (56%), and “MT” (29.3%). While the proportion of

Table 6. Perception of the respondents about responsibility of problems in greenspaces.

| Responsible | Towns | | | | Total |
|------------------|-------------|-------------|---------------|-------------|--------------|
| | Iqbal Town | Jinnah Town | Lyallpur Town | Madina Town | |
| Government | 12 (16.0%) | 22 (29.3%) | 12 (16.0%) | 18 (24.0%) | 64 (21.3%) |
| Local government | 37 (49.3%) | 28 (37.3%) | 17 (22.7%) | 32 (42.7%) | 114 (38.0%) |
| Local community | 15 (20.0%) | 11 (14.7%) | 25 (33.3%) | 9 (12.0%) | 60 (20.0%) |
| All above | 11 (14.7%) | 14 (18.7%) | 21 (28.0%) | 16 (21.3%) | 62 (20.7%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 7. Perception of the respondents about agencies role to improve these problems.

| Organization | Development | | | | Maintenance | | | |
|------------------|-------------|------|-------|------|-------------|------|-------|------|
| | Yes | | No | | Yes | | No | |
| | Freq. | %age | Freq. | %age | Freq. | %age | Freq. | %age |
| Local government | 232 | 77.3 | 68 | 22.7 | 115 | 38.3 | 185 | 61.7 |
| Local community | 72 | 24.0 | 228 | 76.0 | 195 | 65.0 | 105 | 35.0 |
| Others | 16 | 5.3 | 284 | 94.7 | 17 | 5.7 | 283 | 94.7 |

those who were unaware 50.7% “IT”, 68% “JT”, “LT” 44%, and 70.7% “MT”.

The well-aware respondents were further categorized into six categories with respect to their perception about their role that were: FDA, TMA, Local Government, Horticulture authority, PHA & FDA, and NA (No opinion). Results revealed the maximum opinion regarding FDA (13%) and minimum indication PHA 2% followed by local Government (12.7%), FDA (10.3%), PHA (10.3%) and TMA (3.7%). Results from four selected towns regarding indication of organization to FDA showed (IT 9.3%), (JT, 9.3%), (LT, 30.7%), (MT, 2.7%) (Table 9). In case of indication of organization to PHA, “IT” (0%), “JT” (4%), “LT” (0%), “MT” (4%). In case of indication of organization to Local government, (IT, 34.7%), (JT, 6.7%), (LT, 0%), (MT, 9.3%). In case of indication of organization to both PHA & FDA, “IT” 5.3%, “JT” 12%, “LT” 13.3%, “MT” 10.7%. In case of indication of organization to TMA, “IT” 0%, “JT” 0%, “LT” 12%, “MT” 2.7%. Contrary to all above organization, some respondents showed unawareness regarding the responsibility of problems, (IT, 50.7%), (JT, 68%), (LT, 44%), (MT, 70.7%).

Opinion of the respondent about the improvement of green spaces: Respondents observation results with respect to the upgrading of UGS from past revealed that 65% respondents were unaware regarding any improvement made till present, whereas, only 35% respondents agreed about the improvement made in the past. The proportion of well-aware respondents from four selected towns were as “IT” 45.3%, “JT” 16%, “LT” 53.3%, “MT” 25.3%, while the proportion of unaware respondents were as: “IT” 54.7%, “JT” 84%, “LT” 46.7%, “MT” 74.7% (Table 10).

The respondents were enquired about possible impacts of UGS on the surroundings directly or indirectly. The maximum respondents (43%) voted for area beautification while minimum 1% selected the option “encroachment

control”. Similarly, other possible impacts of UGS on the surroundings were: pollution control (15%), attitude improvement (8.3%), increase property value (4.3%), beautification, and other benefits (2.3%).

The proportion of respondents who pointed that UGS added beautification in their vicinities were as “JT” (17.3%), “LT” (60%), “IT” (49.3%), “MT” (45.3%). The respondents those suggested pollution control were: (IT, 13.3%), (JT, 18.7%), (LT, 22.7%), (MT, 5.3%). Respondents those suggested encroachment control through the presence of UGS were as “IT” 0%, “JT” 0%, “LT” 0%, “MT” 4%. In case of the respondents who suggested attitude improvement through “UGS” were as (IT) 0%, (JT) 4%, (LT) 8%, and (MT) 21.3%. Similarly, the respondents who suggested improvement in property value by the presence of UGS were as: (IT, 9.3%), (JT, 0%), (LT, 5.3%), and (MT, 2.7%). The respondents who suggested both beautification and pollution control through the presence of UGS were as: (IT) 20%, (JT) 0%, (LT) 5.3%, (MT) 4%. The respondents those suggested the other possible impacts of UGS on the surroundings were as: (IT) 0%, (JT) 0%, (LT) 0%, (MT) 9.3%. The respondents who suggested all mentioned benefits were as: (IT) 32%, (JT) 17.3%, (LT) 9.3%, (MT) 5.3%. The respondents whose suggestion was nothing regarding the impact of UGS on the surroundings were as: (IT, 8%), (JT, 0%), (LT, 0%), (MT, 2.7%) (Table 11). Parks and green spaces serve as significant buffer zone between urban development and natural habitats these lead to in protecting water reservoirs, sheltering plants and wildlife, offer frivolous opportunities (Senanayake *et al.*, 2013). Provision of urban green structures provide amenity and recreational activities, favorable micro climate, pollution control and urban restoration (Hussain *et al.*, 2010.).

Opinion of respondents about such developments made with community participation: The respondents were asked about community involvement for the betterment of the UGS.

Table 9. Respondent’s perception who should be responsible for development and maintenance of green spaces.

| Responsible body | Towns | | | | Total |
|------------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| FDA | 7 (9.3%) | 7 (9.3%) | 23 (30.7%) | 2 (2.7%) | 39 (13.0%) |
| Horticulture authority | - | 3 (4.0%) | - | 3 (4.0%) | 6 (2.0%) |
| Local Govt. | 26 (34.7%) | 5 (6.7%) | - | 7 (9.3%) | 38 (12.7%) |
| PHS&FDA | 4 (5.3%) | 9 (12.0%) | 10 (13.3%) | 8 (10.7%) | 31 (10.3%) |
| TMA | - | - | 9 (12.0%) | 2 (2.7%) | 11 (3.7%) |
| No (NA) | 38 (50.7%) | 51 (68.0%) | 33 (44.0%) | 53 (70.7%) | 175 (58.3%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 10. Respondent’s awareness about the improvement of green spaces.

| Awareness response | Towns | | | | Total |
|--------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| Yes | 34 (45.3%) | 12 (16.0%) | 40 (53.3%) | 19 (25.3%) | 105 (35.0%) |
| No | 41 (54.7%) | 63 (84.0%) | 35 (46.7%) | 56 (74.7%) | 195 (65.0%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 11. Opinion of the respondents about these improvements had any change on community surroundings.

| Opinion | Towns | | | | Total |
|----------------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| No opinion | 6 (8.0%) | | | 2 (2.7%) | 8 (2.7%) |
| Area beauty Enhancement | 13 (17.3%) | 45 (60.0%) | 37 (49.3%) | 34 (45.3%) | 129 (43.0%) |
| Pollution control | 10 (13.3%) | 14 (18.7%) | 17 (22.7%) | 4 (5.3%) | 45 (15.0%) |
| Encroachment control | | | | 3 (4.0%) | 3 (1.0%) |
| Attitude of people | | 3 (4.0%) | 6 (8.0%) | 16 (21.3%) | 25 (8.3%) |
| Property value enhancement | 7 (9.3%) | | 4 (5.3%) | 2 (2.7%) | 13 (4.3%) |
| Beauty & pollution control | 15 (20.0%) | | 4 (5.3%) | 3 (4.0%) | 22 (7.3%) |
| Others | | | | 7 (9.3%) | 7 (2.3%) |
| All above | 24 (32.0%) | 13 (17.3%) | 7 (9.3%) | 4 (5.3%) | 48 (16.0%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 12. Opinion of the respondents about community participation in development of UGS.

| Response of respondents | Towns | | | | Total |
|-------------------------|-------------|-------------|-------------|-------------|--------------|
| | IT | JT | LT | MT | |
| No | 57 (76.0%) | 58 (77.3%) | 68 (90.7%) | 57 (76.0%) | 240 (80.0%) |
| Yes | 18 (24.0%) | 17 (22.7%) | 7 (9.3%) | 18 (24.0%) | 60 (20.0%) |
| Total | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 75 (100.0%) | 300 (100.0%) |

Table 13. Distribution of the respondents according to their plant preferences in “UGS”.

| Plants type | Towns | | | | Total |
|------------------|------------|------------|------------|------------|-------------|
| | IT | JT | LT | MT | |
| Trees | 43 (57.3%) | 29 (38.7%) | 30 (40.0%) | 8 (10.7%) | 110 (36.7%) |
| Shrubs | 9 (12.0%) | 4 (05.3%) | 19 (25.3%) | 10 (13.3%) | 42 (14.0%) |
| Flowering plants | 47 (62.7%) | 48 (64.0%) | 51 (68.0%) | 45 (60.0%) | 191 (63.7%) |
| Seasonal | 12 (16.0%) | 8 (10.7%) | 3 (04.0%) | 18 (24.0%) | 41 (13.7%) |
| Fruits | 3 (04.0%) | 14 (18.7%) | 8 (10.7%) | 3 (04.0%) | 28 (09.3%) |

Results revealed 80% respondents were unaware of any development done with the participation of the community whereas only 20% were aware about it (Table 12). Community participation in the developing and maintaining of urban green spaces is vital (Younis *et al.*, 2008). It is reported that the communities who showed substantial motivation in contributing green spaces and tree plantation are more sustainable compared with parks and green areas without community participation (Riaz *et al.*, 2012a). Also, Sarwar (2002) reported community involvement willingness for the contribution of UGS development and improvement. The respondents who were well-aware regarding community participation from four selected areas were as: (IT) 24%, (JT) 22.7%, (LT) 9.3%, (MT) 24%. Dwyer (1995) reported positive impact of community participation in urban forestry projects for the improvement of the area environment. Similarly, without community involvement the environment improvement is quite difficult (Johnson, 2007). The respondents who were unaware regarding the community involvement for the betterment of UGS were as: (IT, 76%), (JT, 77.3%), (LT, 90.7%), (MT, 76%). A widespread community involvement program is a vibrant component of urban green spaces

initiative (Anon, 2012). It encourages local community to contribute in planting, care and maintenance of their surrounding green spaces that aids to promote positive attitudes and behavior towards urban greening (Van Herzele *et al.* 2005). Community involvement can expressed be in practical tree planting and its care but it should also let community to have role in wider policy matters.

Opinion of the respondents about kind of plants which they like to have in green spaces: The respondents were enquired about their plant preferences in UGS. The maximum respondents (63.7%) wish for having flowering plants whereas only (9.3%) suggested fruit trees in UGS (Table 13). Similarly, respondent’s preferences with respect to plant types were also enquired as trees (36.7%), shrubs (14%) and seasonal plantation (13.7%). Recently, landscape designers are mostly promoting naturalistic urban landscape approach by installing indigenous plant species. However, in contrary, European and North America countries, are recommending more balanced and sustainable strategy in selection of urban plants based on scientific principles (Johnston *et al.*, 2012). Urban trees should be selected that offer the most appropriate economic, social and environmental benefits for urban dwellers. The planting of entirely native plant species in urban

setting can may limit that choice, particularly to meet the climate change challenge (Knox *et al.*, 2008).

Conclusions: For sustainable development of public parks and green spaces it is worth to consider the liking and disliking of local people during the planning process. The local government must support financial and advisory assistance to develop and maintain green spaces in slum areas. The government needs to encourage local resourceful personnel to develop green spaces targets within local communities. Additional research of such comparative analysis amongst other cities will be crucial to simplify Pakistani citizen's attitudes towards community involvement and management issues of UGS to balance urban sustainability. Nevertheless, the planning authorities need to develop a vision of role and value of urban green spaces and, resources should be targeted better. It is important that all community involvement programs should have balance in consultation, education, and practical participation approach. Otherwise the impact of planting campaigns will be limited.

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